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HYB-005US4.ST25

SEQUENCE LISTING

<110> Kandimalla, Ekambar R.  
Zhao, Qiuyan  
Yu, Dong  
Agrawal, Sudhir

<120> Modulation of Immunostimulatory Activity of Immunostimulatory  
Oligonucleotide Analogs By Positional Chemical Changes

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<141> 2003-10-27

<150> US 09/965,116  
<151> 2001-09-26

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 ttccagctcg caagaggaga acgctcgacc tt 32  
 <210> 76  
 <211> 32  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> modified linkage of oligodeoxynucleotide phosphorothioate  
 <221> modified\_base  
 <222> 16  
 <223> 3'-3' linkage  
 <400> 76  
 gagaacgctc gaccttttcc agctcgcaag ag 32  
 <210> 77  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> modified linkage of oligodeoxynucleotide phosphorothioate  
 <400> 77

tctcccagcg tgcgccat 18

<210> 78  
 <211> 32  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> modified linkage of oligodeoxynucleotide phosphorothioate

<221> modified\_base  
 <222> 16  
 <223> 3'-5' linkage

<400> 78  
 tcccagcgtg cgccattccc agcgtgcgcc at 32

<210> 79  
 <211> 32  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> modified linkage of oligodeoxynucleotide phosphorothioate

<221> modified\_base  
 <222> 16  
 <223> 5'-5' linkage

<400> 79  
 taccgctgc gacccttccc agcgtgcgcc at 32

<210> 80  
 <211> 32  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> modified linkage of oligodeoxynucleotide phosphorothioate

<221> modified\_base  
 <222> 16  
 <223> 3'-3' linkage

<400> 80  
 tcccagcgtg cgccattacc gcgtgcgacc ct 32

<210> 81  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> modified linkage of oligodeoxynucleotide phosphorothioate

<221> modified\_base  
 <222> 5  
 <223> c = beta-L-Deoxynucleoside

<400> 81  
ctatctgacg ttctctgt 18

<210> 82  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> modified linkage of oligodeoxynucleotide phosphorothioate

<221> modified\_base  
<222> 14  
<223> t = beta-L-Deoxynucleoside

<400> 82  
ctatctgacg ttctctgt 18

<210> 83  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> modified linkage of oligodeoxynucleotide phosphorothioate

<221> modified\_base  
<222> 4, 5  
<223> t at position 4 = beta-L-Deoxynucleoside  
c at position 5 = beta-L-Deoxynucleoside

<400> 83  
ctatctgacg ttctctgt 18

<210> 84  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> modified linkage of oligodeoxynucleotide phosphorothioate

<221> modified\_base  
<222> 14, 15  
<223> t at position 14 = beta-L-Deoxynucleoside  
c at position 15 = beta-L-Deoxynucleoside

<400> 84  
ctatctgacg ttctctgt 18

<210> 85  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> modified linkage of oligodeoxynucleotide phosphorothioate

<221> modified\_base  
<222> 9, 10  
<223> c at position 9 = beta-L-Deoxynucleoside  
g at position 10 = beta-L-Deoxynucleoside

<400> 85  
ctatctgacg ttctctgt 18

<210> 86  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> modified linkage of oligodeoxynucleotide phosphorothioate

<221> modified\_base  
<222> 7  
<223> g = beta-L-Deoxynucleoside

<400> 86  
ctatctgacg ttctctgt 18

<210> 87  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> modified linkage of oligodeoxynucleotide phosphorothioate

<221> modified\_base  
<222> 12  
<223> t = beta-L-Deoxynucleoside

<400> 87  
ctatctgacg ttctctgt 18

<210> 88  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> modified linkage of oligodeoxynucleotide phosphorothioate

<221> modified\_base  
<222> (1)...(18)  
<223> all nucleotides = beta-L-deoxynucleoside

<400> 88  
ctatctgacg ttctctgt 18

<210> 89  
<211> 18  
<212> DNA  
<213> Artificial Sequence



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<220>
<223> modified linkage of oligodeoxynucleotide phosphorothioate

<221> modified_base
<222> 5
<223> c = 2'-O-Propargyl-ribonucleoside

<400> 89
ctatctgacg ttctctgt                                     18

<210> 90
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> modified linkage of oligodeoxynucleotide phosphorothioate

<221> modified_base
<222> 15
<223> c = 2'-O'Propargyl-ribonucleoside

<400> 90
ctatctgacg ttctctgt                                     18

<210> 91
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> modified linkage of oligodeoxynucleotide phosphorothioate

<221> modified_base
<222> 4, 5
<223> a at position 4 = 1',2'-Dideoxyribose
      c at position 5 = 1',2'-Dideoxyribose

<400> 91
cctactagcg ttctcatc                                     18

<210> 92
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> modified linkage of oligodeoxynucleotide phosphorothioate

<221> modified_base
<222> 4, 5
<223> a at position 4 = C3-Linker
      c at position 5 = C3-Linker

<400> 92
cctactagcg ttctcatc                                     18

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<210> 93
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> modified linkage of oligodeoxynucleotide phosphorothioate

<221> modified_base
<222> 4, 5
<223> a at position 4 = 3'-methoxyribonucleoside
      c at position 5 = 3'-methoxyribonucleoside

<400> 93
cctactagcg ttctcatc
18

<210> 94
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> modified linkage of oligodeoxynucleotide phosphorothioate

<221> modified_base
<222> 4, 5, 12
<223> a at position 4 = 1',2'-Dideoxyribose
      c at position 5 = 1',2'-Dideoxyribose
      t at position 12 = 2'-methoxyribonucleoside

<400> 94
cctactagcg ttctcatc
18

<210> 95
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> modified linkage of oligodeoxynucleotide phosphorothioate

<400> 95
cctactaggc ttctcatc
18

<210> 96
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> modified oligodeoxynucleotide phosphorothioate

<221> modified_base
<222> 10
<223> g = 7-deazaguanine

<400> 96
ctatctgacg ttctctgt
18

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<210> 97  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> modified oligodeoxynucleotide phosphorothioate

<221> modified\_base  
 <222> 9  
 <223> g = 7-deazaguanine

<400> 97  
 ctatctgagc ttctctgt 18

<210> 98  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> modified oligodeoxynucleotide phosphorothioate

<400> 98  
 tctcccagcg tgcgcat 18

<210> 99  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> modified oligodeoxynucleotide phosphorothioate

<221> modified\_base  
 <222> 10,14  
 <223> g at positions 10 and 14 = 7-deazaguanine

<400> 99  
 tctcccagcg tgcgcat 18

<210> 100  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> modified oligodeoxynucleotide phosphorothioate

<221> modified\_base  
 <222> 5  
 <223> c = C3-Linker

<221> modified\_base  
 <222> 10  
 <223> g = 7-deazaguanine

<400> 100  
ctatctgacg ttctctgt 18

<210> 101  
<211> 18  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> modified oligodeoxynucleotide phosphorothioate  
  
<221> modified\_base  
<222> 10  
<223> g = 6-thioguanine

<400> 101  
ctatctgacg ttctctgt 18

<210> 102  
<211> 18  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> modified oligodeoxynucleotide phosphorothioate  
  
<221> modified\_base  
<222> 9  
<223> g = 6-thioguanine

<400> 102  
ctatctgagc ttctctgt 18

<210> 103  
<211> 18  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> modified oligodeoxynucleotide phosphorothioate  
  
<221> modified\_base  
<222> 9  
<223> c = 4-thiouridine

<400> 103  
ctatctgacg ttctctgt 18

<210> 104  
<211> 18  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> modified oligodeoxynucleotide phosphorothioate  
  
<221> modified\_base  
<222> 5

<223> c = 1,2-Dideoxyribose

<221> modified\_base

<222> 9

<223> c = 4-thiouridine

<400> 104

ctatctgacg ttctctgt

18

<210> 105

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> modified oligodeoxynucleotide phosphorothioate

<221> modified\_base

<222> 9

<223> c = Ara-C

<400> 105

ctatctgacg ttctctgt

18

<210> 106

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> modified oligodeoxynucleotide phosphorothioate

<221> modified\_base

<222> 10

<223> c = Ara-C

<400> 106

ctactctgac cttctctgt

19

<210> 107

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> modified oligodeoxynucleotide phosphorothioate

<221> modified\_base

<222> 9

<223> c = 1',2'-Dideoxyribose

<400> 107

ctatctgacg ttctctgt

18

<210> 108

<211> 18

<212> DNA

<213> Artificial Sequence

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<220>
<223> modified oligodeoxynucleotide phosphorothioate

<221> modified_base
<222> 8
<223> a = 1',2'-Dideoxyribose

<400> 108
ctatctgacg ttctctgt
18

<210> 109
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> modified oligodeoxynucleotide phosphorothioate

<221> modified_base
<222> 6
<223> t = 1',2'-Dideoxyribose

<400> 109
ctatctgacg ttctctgt
18

<210> 110
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> modified oligodeoxynucleotide phosphorothioate

<221> modified_base
<222> 4
<223> t = 1',2'-Dideoxyribose

<400> 110
ctatctgacg ttctctgt
18

<210> 111
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> modified oligodeoxynucleotide phosphorothioate

<221> modified_base
<222> 11
<223> t = 1',2'-Dideoxyribose

<400> 111
ctatctgacg ttctctgt
18

<210> 112
<211> 18
<212> DNA

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<213> Artificial Sequence

<220>

<223> modified oligodeoxynucleotide phosphorothioate

<221> modified\_base

<222> 13

<223> c = 1',2'-Dideoxyribose

<400> 112

ctatctgacg ttctctgt

18